

CLAIMS:

1. A dynamic positioning device for supporting a patient in a prone position for surgery, comprising a frame adapted to be mounted to an operating table, and a number of patient positioning modules mounted to said frame, each of a plurality of said patient positioning modules being free to move along three orthogonal directions and comprising a first carriage mounted for longitudinal translational movement relative to said frame, a second carriage riding on said first carriage for lateral translational movement relative to said frame, and a patient positioning pad mounted to said second carriage, said patient positioning pad being vertically movable relative to said frame, thereby providing for individual preoperative and intra-operative adjustments of said plurality of patient supporting modules along three orthogonal directions.
2. A device as defined in claim 1, wherein each said patient positioning pad is mounted to a pad support structure, said pad support structure being mounted for vertical sliding movement along a post extending from said second carriage.
3. A device as defined in claim 2, wherein said pad support structure is rotatable about said post.
4. A device as defined in claim 1, wherein said frame includes a pair of laterally spaced-apart longitudinal rails, and wherein each said first carriage is mounted for sliding movement along one of said longitudinal rails, said first carriage having a transversal rail on which said second carriage is slidably mounted, and wherein a vertical post extends from said second carriage, said patient positioning pad being mounted on a pad support structure slidable along said vertical post.

5. A device as defined in claim 4, wherein said patient positioning modules include a pair of corrective pads adapted to be removably mounted to the operating table for temporarily applying corrective forces on patient torso from a postero-anterior approach.

6. A device as defined in claim 5, wherein each corrective pad is mounted to a set of articulated rods.

7. A device as defined in claim 6, wherein locks are provided between the rods for releasably securing the rods in position.

8. A device as defined in claim 1, wherein said positioning units include a number of corrective pads mounted to articulated structures adapted to be mounted to the operating table, the articulated structures being securable in a variety of positions for apply pushing forces on the patient torso in a direction opposite to the patient's deformity.

9. A device as defined in claim 1, wherein said first and second carriages are provided with set screws for allowing said first and second carriages to be releasably locked in a selected position.

10. A device as defined in claim 1, wherein said pad support structure is releasably securable at various height along said post by means of a plug mounted to said pad support structure and normally urged against said post by a spring, and wherein a handle is provided on said pad support structure for moving said plug away from said post against said spring in order to release said pad support structure from said post.

11. A trunk positioning device, comprising a frame adapted to be removably mounted to an operating table, a number of pads for engaging a trunk of a patient, each of a plurality of said pads being independently adjustably

mounted to said frame for movements along three independent directions in order to permit 3-D manipulation thereof by a surgeon either before the surgery while a patient is being positioned or when additional corrective forces on the patient's thorax are needed, thereby providing not only for stable positioning of the patient on the operating table but also providing for active application of individual corrective forces at different locations on the patient's trunk.

12. A device as defined in claim 11, wherein each of said plurality of pads is independently longitudinally and transversally slidable relative to said frame.

13. A device as defined in claim 11, wherein said plurality of pads are individually vertically movable relative to said frame to provide for independent adjustment of the height of the pads.

14. A device as defined in claim 11, wherein each pad is independently angularly orientable relative to the frame.

15. A device as defined in claim 11, wherein the pads are convexly curved to generally follow the curvatures of the trunk of the patient.

16. A device as defined in claim 11, wherein each of said plurality of pads includes a first carriage mounted for longitudinal translational movement relative to said frame, a second carriage riding on said first carriage for lateral translational movement relative to said frame, and a pad support structure adjustably mounted to said second carriage, said pad support structure being vertically movable relative to said second carriage.

17. A device as defined in claim 16, wherein said pad support structure is mounted for vertical sliding movement along a post extending from said second carriage.

18. A device as defined in claim 17, wherein said pad support structure is rotatable about said post.

19. A device as defined in claim 11, wherein said frame includes a pair of laterally spaced-apart longitudinal rails, and wherein each said first carriage is mounted for sliding movement along one of said longitudinal rails, said first carriage having a transversal rail on which said second carriage is slidably mounted, and wherein a vertical post extends from said second carriage, said pad support structure being slidable along said vertical post.

20. A device as defined in claim 11, wherein said pads include a pair of geobosity corrective pads mounted to respective articulated structures adapted to be mounted to the operating table, the articulated structures being securable in a variety of positions for apply pushing forces on the patient torso in a direction opposite to the patient's deformity.